

STRATEGIC MAINTENANCE OF PAVEMENTS BY SEALING WITH A SPECIAL MIXTURE OF BITUMINOUS EMULSIONS

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ABSTRACT

The paper presents and discusses the results of laboratory investigations and field experiences of a product, namely, PenTack - a special mixture of bitumen emulsions for asphalt pavement maintenance by sealing. The results presented in this contribution include effect of the PenTack treatment on the physical properties of bitumen binder, such as the ductility and complex modulus, as well as the mechanical performance of asphalt. The investigation into the mechanical properties involves effect of the sealing treatment on compressive strength, bending strength, the resistance to the permanent deformation under different test conditions. The results demonstrate that the flexibility of the aged asphalt has been restored. Consequently, the field experience shows that the life time of the pavement can be extended for another period of 3 to 5 years. Finally a strategic program is proposed for the maintenance of asphalt pavements based on the test results and our practical experiences.

KEY WORDS: Bitumen, Asphalt, Ageing, Road, Maintenance, Rejuvenating